

# Going the extra mile

For seamless connectivity across the GCC region, Tawasul Telecom's MPLS network is the optimal solution.

Businesses all over the world are looking to expand both within the regions they have historically served, as well as internationally into new markets. They are driven by the importance of finding new customers for their products and services, so that they can sustain growth and maintain profitability.

This drive to expand into new territories brings with it an urgent need for seamless connectivity between different offices and branches. Employees based far from the head office of an organisation need secure and speedy access to the same data and applications as everybody else. Without the right network to provide this, the whole organisation suffers.

These cross-border networking pressures are being faced by enterprises active across the Gulf Cooperation Council (GCC) and the Middle East, as much as they are in any other part of the world.

Enterprises with activities across the Arabian Gulf will inevitably find themselves in need of a fast, easy and efficient way of transferring data between geographically dispersed locations. As such, they will be in need of a networking partner with a strong presence in the region, who can help them navigate a number of available technologies to facilitate data communication across borders. Helping them choose the best option is where the strengths of Tawasul Telecom come in to play.

Tawasul Telecom serves as a one-stop shop for a fully redundant, highly available, all encompassing solution. Its track record of fast service deployment, which is unmatched across the region, empowers service providers to achieve profitability sooner, and to handle the wide variety of challenges faced by their customer base.

With its supplier-neutral stance, Tawasul Telecom's regional network is based on optimal levels of redundancy and high availability. It benefits from the innately strong and powerful features that you would expect from a good Multi Protocol Label Switching (MPLS) network, enabling Tawasul Telecom to back its services confidently with a carrier grade SLA covering the whole of its regional footprint.

## Why MPLS?

MPLS offers the perfect solution for today's connectivity requirements. A tried and tested mechanism for high performance telecommunications networks, MPLS directs and carries data from one network node to the next with the help of labels, encapsulating packets of various network protocols.

It is a scalable, protocol-agnostic standard. In an MPLS network, data packets are given labels, with packet-forwarding determined according to the contents of this label, without the need to examine the actual packet itself. This allows the service provider to create end-to-end circuits across any type of transport medium, using any protocol they wish.

### MPLS is popular because it offers:

- Highly available, and very reliable network connectivity;

- Guaranteed service availability;
- Privacy and security equivalent to Frame Relay and ATM network environments;
- The ability to integrate multi-service, multi-networking requirements into a single IP infrastructure;
- A way to minimise operating costs;
- Simplified network management through reducing the number of devices;
- Scalability, by allowing the introduction of new services without a major network upgrade;
- A way to combine the best capabilities of Layer 2 (secure and protocol independent) and Layer 3 (scalable and flexible) networking.

## The right partner

For delivery of MPLS connectivity in the GCC region, Tawasul Telecom is your optimal partner. It offers secure intranet and extranet access between its regional network and any destination in the world, while encouraging customisation via flexibility of its services. The customers can focus on their core business and its requirements, and all changes within these requirements are enabled by the flexibility of services only Tawasul Telecom can facilitate in the region.

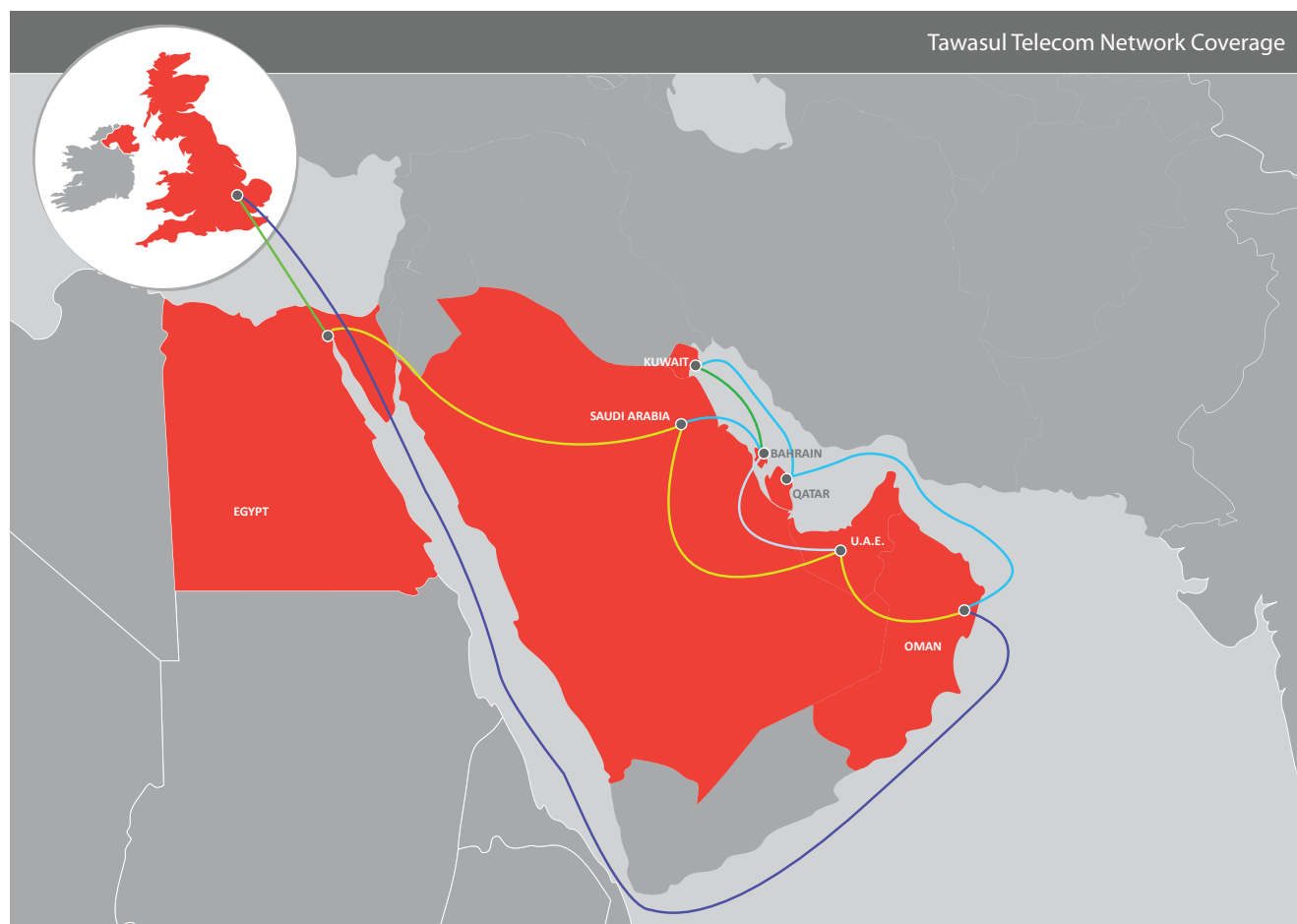
With Tawasul Telecom you get proactive monitoring, troubleshooting and problem prevention, as well as service guarantees and fast implementation.

Tawasul Telecom is partnered with dominant regional carriers, as well as many Tier 1 international operators. Its scalable and cost-effective network solution requires minimal investment by clients, and it enables maximised port utilisation by supporting multiple applications over a single network using multiple Class of Service (CoS) definitions.

"With the development of the region's telecommunications and IT infrastructure as our prime objective, we have built our state-of-the-art network from the ground up according to the highest technological standards," says Salem Almulaifi, Business Development Director of Tawasul Telecom. "We are able to provide secure, reliable and guaranteed inter-connection within our of geographically dispersed network footprint to suit the needs of the most highly demanding business environments."

### Tawasul Telecom MPLS deployment features 100% compliance to the following standards:

- Fully compliant with RFC 4364 and RFC 2547bis (BGP/MPLS VPN);
- Resides on private network that is separated from the public segments by multiple firewalls and Intrusion Prevention Systems (IPS);
- Traffic engineering in the network's core utilising MPLS-RSVP/TE;
- Engineered with capacity and redundancy to ensure optimal performance and survivability of the network.



“Our network is carried on a number of world-class optical fibre cable systems,” says Fajhan Almutairi, Chief Technology Officer with Tawasul Telecom. “We use all the available submarine and terrestrial cable systems in the region to ensure minimal interruptions and maximum availability. Our network is self-healing with multiple fibre paths, creating an automatic data recovery solution where in the event of an outage, data is automatically rerouted to another path to prevent delays and congestion.”

### The services

Tawasul Telecom provides both Layer 2 (Ethernet) and Layer 3 (IP-VPN) services, which can be used to implement various connectivity solutions:

1. Point-to-Point
2. Hub and Spoke
3. Partial Mesh
4. Full Mesh
5. Overlapping VPNs.

Tawasul Telecom’s Ethernet (Layer 2 MPLS) provides a complete separation between its own network and the customer’s network. It transports customer Layer 2 frames, making it independent of Layer 3 protocol used by the customer, enabling the network to carry various network protocols (e.g. IPv4, IPv6, IPX, DECNet, OSI, etc). Also, through the use of virtual circuits

(VCs) it is capable of supporting multiple VPN topologies. Although it requires some degree of customer control over their own networks, customers with specific network requirements can benefit from the flexibility offered by Tawasul Telecom’s Ethernet service.

### Other benefits:

- Efficient use of customer access bandwidth;
- Guaranteed privacy and security, as no IP information is disclosed;
- Provides a platform for value-added services, with the greatest flexibility to create intranets and extranets for any type of applications;
- Simple migration from existing IP services to Layer 2 VPN (MPLS). L2 MPLS provides like to like connectivity between the clients networks, presenting point-to-point access points to the network.

The IP-VPN (Layer 3 MPLS) service offers an IP routed solution which is capable of supporting multiple VPN topologies. This service simply takes the customer IP datagrams from a given site, looks up the destination IP address in a forwarding table and then sends that datagram to its destination through Tawasul Telecom MPLS network. This service leverages the advanced route distribution control capabilities of Tawasul Telecom’s network.

The IP-VPN (Layer 3) service connects geographically separated local networks to each other, and is suitable for customers with large network and frequent changes in topology. Layer 3 automatic route discovery is more scalable and cost effective.

**Benefits include:**

- Each VPN has an internal VPN forwarding table (VRF) that is unique to each and every customer;
- Traffic of one VPN will not overlap with another;
- MPLS services are terminated on dedicated devices that do not carry any public IP traffic;
- Controlled traffic to MPLS network;
- Access control list is applied to all MPLS routers, passing only specific IP address range.

Any Tawasul MPLS IP VPN solution offers both reliability and redundancy. All nodes are multi-homed, and each link is carried on a separate cable system. The network has 99.9% availability, reaching across the whole GCC and Middle East, serving regional and international companies. Services benefit from a robust network design and equipment diversity, and each MPLS PoP has at least two PE routers. The cable systems the network is based on are either fully protected by or offer diversity. In case of cable outage, MPLS traffic is rerouted via alternate paths to maintain service instantaneously.

**Quality comes first**

MPLS is a specific data-carrying mechanism designed to provide a unified data-carrying service to make the most efficient use of network resources.

Packets of different applications, users or data flows have different priorities in transportation or performance. This specification of MPLS is Quality of Service (QoS).

Without QoS being implemented, the bandwidth is not utilised in the best way if traffic demands classification, and with unpredictable network parameters, networks can get congested. QoS is all about managing the application traffic during network congestion, and providing minimum bandwidth guarantees.

**Tawasul Telecom maintains four classes on the core network, and their characteristics and applications are as follows:**

- **Real-time class:** For high output applications that require rigorous timing control and performance metrics, as well as streaming media, voice, and circuit emulation (VoIP traffic, video conferencing);
- **Time-critical class:** For mission-critical applications with lower delay sensitivity than voice/video applications, as well as for surveillance video, applications with flow-control capable transport layers (video/audio streaming, mission-critical company data);
- **Business class:** For sporadic LAN-to-LAN traffic, or applications that favour throughput over delay;
- **Best-effort class:** For lower-priority, sporadic applications, file transfers, like email, web browsing and general data traffic.

The high requirements of today's applications need guarantees in the form of a service level agreement (SLA). QoS provides guaranteed quality for application packets and measurable qualities including: bandwidth, packet loss, delay, jitter and availability.

QoS and network topology combined can provide particular guarantees specified in the SLA backed by credit scheme. These

include: service installation, site availability and mean time to repair (MTTR).

An MPLS IP VPN furthermore offers scalability to cater to businesses' expansion plans. The scalability feature of Tawasul Telecom's network enables instant upgrades of connectivity and redundancy, including security and privacy of transported data. And you'll see an end to forklift upgrades – meaning less disruption and a more transparent service cost. You get a single platform with a common contract and SLA structure.

Tawasul Telecom's MPLS services are supported by dedicated customer support personnel, and monthly customised reporting. Customers enjoy 24/365 telephone support, and management escalation with scales of severity of fault. Moreover, Tawasul Telecom's support is compliant with industry

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recognised service management standards, and features proactive notification of maintenance and fault resolution, backed by a multilingual support team.

Tawasul's IP VPN solutions offer an alternative to a classic IPLC service, commonly used by companies looking for international connections. Tawasul's IP VPN is a secure L3/L2 private IP VPN running on our MPLS cloud and extended internationally through an expansive network of global partnership agreements.

Tawasul's IP VPN services offer customers their own private network, including their own IP addressing plan - an ideal solution for companies with facilities spread throughout the GCC and the Middle East, and in need of maintaining fast, secure and reliable communications wherever those offices are.

To cap a successful year, Tawasul Telecom recently won the prestigious *Capacity Best Niche/New Player* 2011 award for the pan-Asian carrier category. Tawasul was chosen for its ability to provide a one-stop shop for enterprises and international telcos looking for connectivity in the Middle East, with the award presented at Capacity Europe 2011 in Amsterdam.

“Tawasul Telecom was thrilled to be recognised for its achievements from an entity such as *Capacity* which specialises in the wholesale telecommunications market and carrier-to-carrier business,” said Salem Almulaifi.



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